Manufacturing and the Midwest Rural Economy Recent Trends and Implications for the Future

Rural communities in the Midwest gained manufacturing jobs during the 1980's and into the 1990's even as urban areas sustained large job losses. Mirroring national patterns, most of the rural manufacturing job gains were in less urbanized and completely rural nonmetro counties. In addition, counties that have gained manufacturing jobs exhibited substantially better economic performance than other counties. These recent trends indicate that, as long as rural manufacturing firms are able to maintain their competitiveness, manufacturing may well provide the basis for continued economic growth.

great deal has been written in recent years about the deindustrialization of America and the declining importance of manufacturing. However, one of the most striking trends is continued growth of manufacturing jobs in smaller rural areas, even in the face of large job losses in urban areas. Clearly, rumors of the death of manufacturing as a generator of rural jobs have been greatly exaggerated. In fact, manufacturing has replaced agriculture as the primary economic base for much of the rural Midwest (Testa). While the rural manufacturing job picture remains positive, jobs are only part of the story and the relatively bright picture of manufacturing job growth fades when the widening gap between rural and urban earnings per job is taken into account.

This article is divided into three major parts. First, recent trends in rural manufacturing are described for five Midwestern States (Illinois, Indiana, Iowa, Michigan, and Wisconsin), emphasizing job and earnings trends since the early 1980's. The next looks briefly at what these trends have meant to rural communities in terms of overall job, income, and population growth. The third part discusses

what the future might hold for rural manufacturing in the Midwest and the communities that depend on it.

Jobs and Earnings Rose during the 1980's and 1990's

Changes in Manufacturing Jobs. The massive loss of manufacturing jobs since 1979 and continuing throughout the 1980's is a familiar story. U.S. manufacturing jobs declined by over 2.2 million (10 percent) between 1979 and 1982. The subsequent recovery brought only slow and uneven growth in manufacturing jobs. After 1989, manufacturing industries once again began shedding jobs, and all the jobs gained during the recovery were lost in the recession in 1990. By 1994, despite more than 3 years of recovery, the number of U.S. manufacturing jobs was still 2.5 million (11 percent) below the 1979 peak of 21.5 million jobs.

As the traditional center of U.S. manufacturing, the Midwest sustained a large share of these job losses. The Midwest lost 811,282 manufacturing jobs (20 percent) between 1979 and 1982—about 36 percent of the total U.S. losses, even though the region accounted for only 19 percent of the jobs. As in the Nation as a whole, the number of manufacturing jobs in the Midwest grew modestly between 1982 and 1989. Since 1989, the Midwest has fared slightly better than the Nation as a whole, with

G. Andrew Bernat, Jr., is a regional economist with the Regional Economic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce. The views expressed in this paper are solely the author's and do not necessarily reflect the views of the Bureau of Economic Analysis or the U.S. Department of Commerce.

more moderate job losses through 1991 and greater job growth from 1992 through 1994 (table 1).

Metro-nonmetro patterns. This is a rather grim picture of manufacturing as a source of jobs and income but, as is often the case with aggregate numbers, looking at total manufacturing jobs obscures the fact that much of the picture is an urban phenomenon. Mirroring the experience of rural communities throughout the Nation, many rural communities in the Midwest actually experienced manufacturing job growth during the 1980's and the early 1990's.

Both metro and nonmetro counties lost a substantial number of jobs during the recessions of the early 1980's. Job losses in metro counties were greater, both in absolute and in relative terms, than in nonmetro counties. Between 1979 and 1982, the number of metro manufacturing jobs declined by 676,646 (20 percent) compared with nonmetro losses of 135,834 jobs (18 percent). By 1989, metro counties had regained only a fraction (72,216 or 11 percent) of the losses experienced between 1979 and 1982. Additional job losses after 1989 meant that there were only 33,000 more metro manufacturing jobs in 1993 than in 1982 and 642,000 (19 percent) fewer than the 1979 peak.

In contrast, nonmetro counties added 129,514 manufacturing jobs between 1982 and 1989, a 21-percent gain. Another 60,761 jobs were added between 1989 and 1994, despite the recession of 1990-91. By 1994, the number of nonmetro manufacturing jobs was 7 percent above the 1979 peak (table 2).

Rural communities have not shared equally in this recent growth in manufacturing jobs. In the Midwest, as in the rest of the country, virtually all of the growth in manufacturing jobs during the 1980's occurred in less urbanized and completely rural counties. These rural counties expe-

County Types and Data Sources

The three types of nonmetro counties are derived from the 10-category rural-urban continuum as described in Butler and Beale, 1994. Urbanized nonmetro counties have an urban population of 20,000 or more, less urbanized counties have an urban population of 2,500 to 19,999, and completely rural counties have an urban population of less than 2,500. Employment, earnings, and population data are from the Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce. Estimates of the number of establishments in export industries are derived from County Business Patterns data, Bureau of the Census, and data from the International Trade Administration.

Table 1

Job growth in the Midwest and United States, 1969-94

Midwest manufacturing job growth stronger than U.S. growth since 1982

	Midwest		United States		
	Change in jobs	Rate	Change in jobs	Rate	
	Thousands	Percentage	Thousands	Percentage	
1969-79	-68.6	-1.7	951.2	4.6	
1979-82	-811.3	-19.9	-2,227.0	-10.4	
1982-89	202.1	6.2	727.4	3.8	
1989-94	22.4	.6	-968.5	-4.8	

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Dept. of Commerce.

Table 2

Rural and urban job growth in the Midwest, 1969-94

Most Midwest manufacturing job growth has been in rural counties

	Rural		Urban		
	Change in jobs	Rate	Change in jobs	Rate	
	Thousands	Percentage	Thousands	Percentage	
1969-79	72.0	10.6	-140.7	-4.1	
1979-82	-135.8	-18.1	-675.6	-20.4	
1982-89	129.5	21.0	72.2	2.7	
1989-94	60.8	8.2	-38.5	-1.4	

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Dept. of Commerce.

rienced substantially higher growth rates than either metro counties or urbanized nonmetro counties (see box, p. 3, for definitions).

These trends are illustrated in figure 1, which shows manufacturing jobs relative to the 1979 level for the county groups. All four types of counties followed similar paths up to the end of the 1982 recession. Since 1982, job growth has been nonexistent in metro counties, low in urbanized nonmetro counties but fairly substantial in both less urbanized and completely rural counties (fig. 2).

Earnings. Reflecting their growth in manufacturing jobs, rural counties exhibited stronger growth in earnings from manufacturing than urban counties. However, rural growth in manufacturing earnings has not been as strong as was the case with jobs. Nationally, earnings per worker in manufacturing grew only 3 percent during the 1980's compared with growth of over 13 percent during the 1970's. In rural areas, earnings per worker rose gradually to a plateau of approximately \$31,000 in the mid-1980's and then have declined about 3 percent, after adjusting for inflation, to roughly the same level as in 1977. As urban and rural earnings per worker have moved in opposite directions, the gap between rural and urban Figure 1

earnings per job grew from about 25 percent in 1982 to 30 percent in 1994 (fig. 3).

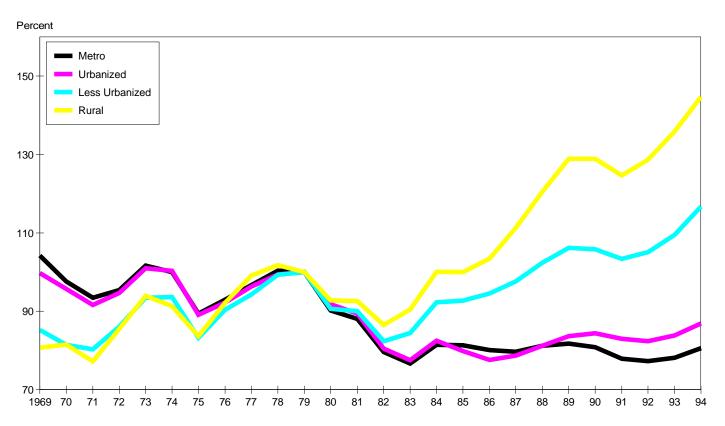
Some of this gap is due to industry composition. Rural areas have a greater concentration of jobs in low-wage industries such as food processing and apparel. However, recent data from the Annual Survey of Manufactures indicate that rural wages are substantially lower than urban wages in almost all manufacturing industries, so only a small portion of the wage gap can be attributed to industry mix effects (Bernat, 1995).

A more important factor is the difference in occupational mix. While the number of nonproduction workers has grown considerably in rural manufacturing establishments, the number has grown much faster in urban establishments. In other words, there is an increase in the spatial division of labor. Because nonproduction workers (mainly white collar) are paid substantially more than production workers, the increase in the spatial division of labor contributes to the increasing gap between urban and rural wages.

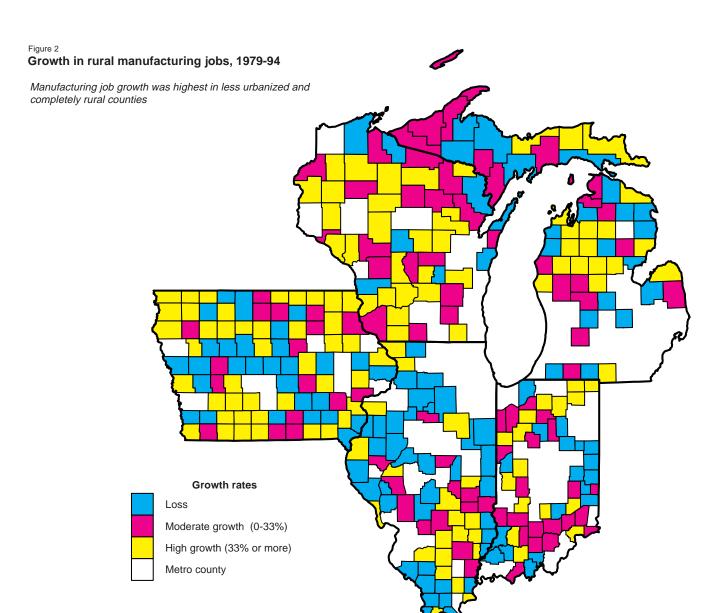
Effects on Rural Communities. One important consequence of the growth in manufacturing jobs and earnings

Manufacturing jobs relative to 1979

Manufacturing jobs grew fastest in completely rural counties after 1982



Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce.



is the increased importance to rural economies of manufacturing, especially in less urbanized and completely rural counties. Manufacturing's share of total jobs has declined steadily in both metro counties and in urbanized nonmetro counties, from approximately 30 percent in 1969 to under 20 percent in 1994. In completely rural counties, manufacturing's share of total jobs remained around 11 to 12 percent throughout the 1970's and early 1980's before starting to rise in the late 1980's. The share of total jobs accounted for by manufacturing in less urbanized counties has fluctuated around 17-18 percent since 1969 (figs. 4 and 5).

Source: Regional Economic Information System, Bureau of Economic Analysis,

Department of Commerce.

The increased importance of manufacturing is more pronounced in the case of earnings than jobs. As was the case with jobs, manufacturing earnings in urbanized counties have generally followed the same downward course as in metro counties, although the decline was

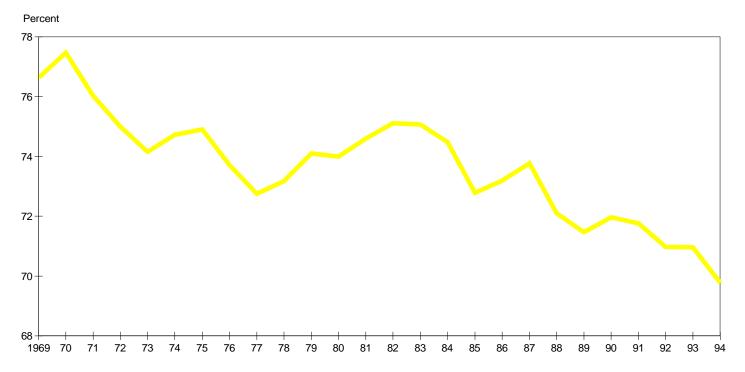
more moderate during the 1980's. Despite this long-term decline, manufacturing earnings accounted for over 30 percent of total earnings in urbanized nonmetro counties. The importance of manufacturing earnings increased in both less urbanized counties and completely rural counties, rising from about 23 percent in 1969 to 28 percent in 1994 in less urbanized counties, and from about 14 percent to 23 percent in 1994 in completely rural counties (fig. 6).

Looking a little more closely at manufacturing jobs by type of industry, durable manufacturing is slightly less important in nonmetro counties than in metro counties. Total earnings from durables industries accounted for 60 percent of all urban manufacturing earnings and 56 percent in rural.

Figure 3

Earnings per rural job as a percentage of urban job earnings

The gap between rural and urban earnings per job has grown since 1982

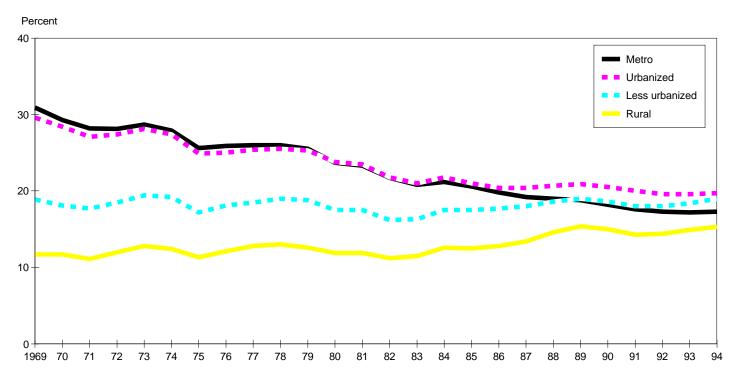


Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce.

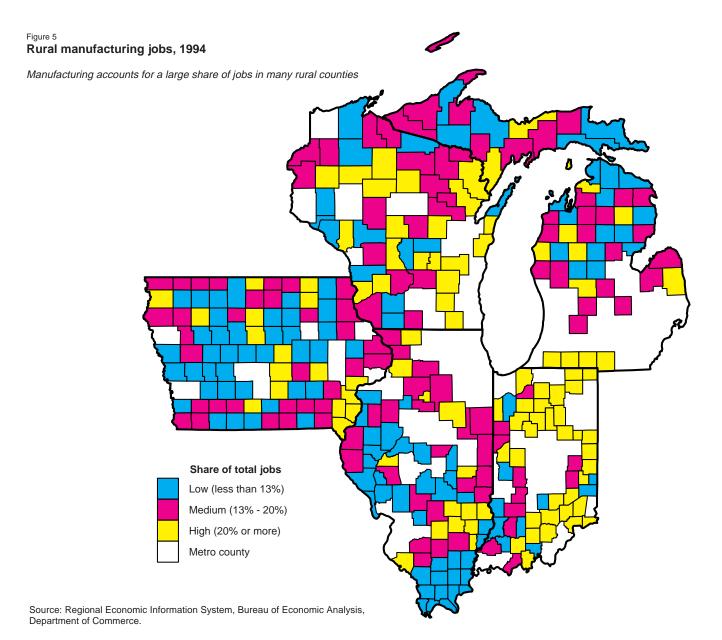
Figure 4

Manufacturing's share of total jobs

Manufacturing's share of jobs in less-urbanized and completely rural counties has grown since 1982



Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce.



This difference is small but potentially important. First, wages in durables-producing industries are approximately 15 percent higher than in nondurables-producing industries. Second, durables-producing industries appear to have greater potential for future job and earnings growth. Employment in nondurables manufacturing has been remarkably constant for the past 20-30 years, providing little reason to believe that nondurables will be a source of significant job growth in the future.

In contrast, employment in durables manufacturing has varied widely in response to business cycles and changes in international trade. International trade is the key reason that durables manufacturing may have greater potential for job growth because most of America's exports of manufactured goods are durables. Of the 20 manufactur-

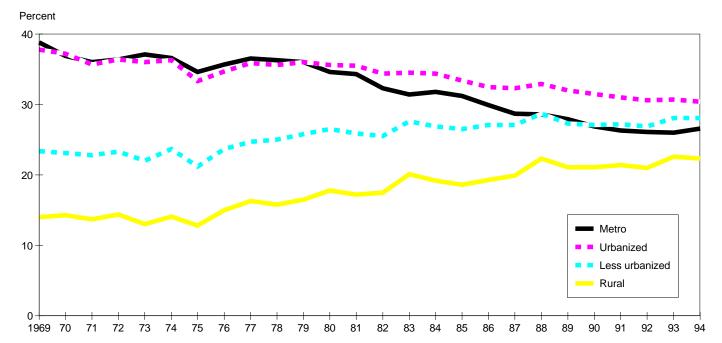
ing industries, the only four industries for which exports are equal to 20 percent or more of the value of production are durables (machinery, electrical equipment, transportation equipment, and instruments). An expanding world economy means that the potential market for exporters will expand faster than will the domestic market. Thus, while the possibility of significant job losses certainly exists in durables-producing industries, there is also greater potential for growth.

Export industries comprise 42 percent of all metro manufacturing establishments in the Midwest but only 26 percent of the establishments in nonmetro counties. While nonmetro counties have relatively fewer establishments in export industries, the industries comprise a high proportion of the manufacturing base in many counties (fig. 7).

Figure 6

Manufacturing's share of total earnings

Manufacturing's share of earnings in less-urbanized and completely rural counties has grown since the mid-1970's



Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce.

Moreover, about half of nonmetro establishments had at least some exports in 1995 compared with slightly fewer than 57 percent in metro areas. Even manufacturers in the most remote rural areas exported 9.5 percent of their production (Gale, "Rural Manufacturers").

Manufacturing and Growth Associated with Higher Overall Growth

To what extent has this growth in rural manufacturing been accompanied by overall economic growth? Much of the discussion of manufacturing's role in rural development is predicated on the notion that growth of an important economic base industry like manufacturing will be accompanied by improvement in overall local economic conditions. However, as the economy continues to shift from a strong reliance on goods-producing industries for jobs to one in which the vast majority of jobs are in services-producing industries, manufacturing job growth may not lead to overall job or income growth. While a rigorous study of the determinants of rural growth is beyond the scope of this article, the following look at growth patterns indicates that counties exhibiting growth

in manufacturing jobs also exhibited higher rates of overall economic growth.

Midwest counties experiencing any growth in manufacturing jobs during 1979-94 indeed had better economic performance. Nearly two-thirds of all nonmetro counties in the Midwest experienced some growth in manufacturing jobs compared with half of metro counties. Nonmetro counties with no manufacturing job growth between 1979 and 1994 experienced an average population loss of 3.2 percent, average growth in total jobs of 6.4 percent, and an average loss of 24.8 percent of manufacturing jobs. In dramatic contrast, counties with at least some growth in manufacturing jobs had population growth of 1.2 percent, total job growth of 20.2 percent, and manufacturing job growth of nearly 66 percent (table 3).

The positive relationship between manufacturing and overall economic conditions seen in table 3 runs counter to some of the recent work on the determinants of urban economic growth. For instance, Glaeser, Scheinkman, and

Figure 7 Export industries, 1993 Export industries are an important part of the rural job base Share of manufacturing establishments Low (less than 16%) Medium (16% - 23%) High (more than 23%) Metro county

Shleifer concluded that low rates of economic growth were associated with high initial shares of manufacturing jobs. However, preliminary work using a model similar to Glaeser's shows just the opposite for nonmetro counties in the Midwest: counties in which manufacturing had a high share of total jobs at the beginning of the period tended to have higher rates of overall growth.

Export industries are defined here as SIC 35-38. Number of establishments

Source: Regional Economic Information System, Bureau of Economic Analysis,

are from County Business Patterns.

Department of Commerce.

Three Factors Will Affect Future Manufacturing Growth

While we can only speculate about the course manufacturing will take and how this will affect rural communities, there are a number of broad trends that will affect rural manufacturing. These issues can be grouped under three broad, interrelated topics: the globalization of manufacturing, changing technology, and restructuring of manufacturing.

Globalization. Certainly a key condition for rural manufacturing is international trade. The dependence of the Midwest—rural as well as urban areas—on durables manufacturing is both an advantage and a disadvantage. The advantage is that the United States is still quite competitive in the production of many durables. While nonmetro counties, both in the Midwest and the Nation, tend to be relatively specialized in nondurables such as food processing, apparel, and paper, a substantial proportion of rural establishments are in export industries in many counties. These counties may thus be well-positioned to share in any growth in world markets.

The disadvantage of relying on durables manufacturing is that trade can be a two-edged sword: along with the large and growing market for U.S. output is a large and growing pool of potential competitors. Many durables-producing industries not only export a high proportion of their output, they also exhibit a high degree of import penetration. Therefore, firms and establishments that do not produce world-class products will face strong competition from other nations.

Trade thus presents both opportunities and risks. Establishments that are able to compete globally are likely to prosper. Recent research conducted at the Census Bureau's Center for Economic Studies (Bernard and Jensen) has shown that exporting establishments have much higher growth, pay higher wages, and survive longer than establishments that do not export. The communities where these establishments are located will share in this prosperity. In contrast, the relatively high specialization of many rural economies on nondurables means that these communities may face substantial international competition for their products but with much less opportunity for exporting.

Technology. The rapid pace of technological progress and change also presents both opportunities and risks. Recent research shows that rural manufacturers have adopted advanced technology at rates comparable with urban plants (Gale, Aug. 1997). One of the most obvious results of advancing technology is the substantial increase in output per worker. This means that even with growing output, employment levels could fall. For instance, most economic projections show manufacturing gross State product per job growing approximately 38 percent (1.8 percent per year) between 1992 and 2010 (U.S. Department of Commerce). Under such a scenario, rural manufacturing employment will grow only if existing establishments are able to increase output by more than 1.8 percent per year or if rural communities are able to

attract new manufacturing establishments. Significant, sustained increases in output per worker will require significant capital investment; however, recent data indicate that capital expenditures per worker are lagging in rural areas (Bernat, 1995). For rural communities to attract new manufacturing, manufacturers will have to view these communities as profitable locations. The generally lower productivity of rural establishments implies that the rural advantage is still largely a cost advantage.

Restructuring. Closely related to both increased globalization of manufacturing and rapid changes in technology is the notion that the manufacturing sector is undergoing fundamental restructuring. This has received a great deal of attention in both the popular press and academic literature. Rapid changes in technology and markets have brought about vastly increased emphasis on information and on flexibility, which have in turn affected virtually all aspects of the manufacturing industry: the production process, marketing, and even the organizational structure of manufacturing firms.

One aspect of this restructuring is a shift from production to nonproduction workers. Thus, access to a labor pool with workers in occupations such as engineering, marketing, customer service, and finance is becoming increasingly important for firms in many industries. Another aspect of this restructuring is the increasing importance of information flows and the role of information in overall economic growth. The most recent literature on urban economic growth, which focuses on the role of information, innovation, and human capital accumulation in the growth process, concludes that a greater need for information and innovation makes central locations with con-

Table 3

County population, per capita income, and job growth by level of manufacturing job growth, 1979-93

Counties with manufacturing job growth had higher overall economic growth between 1979 and 1993

Туре	Population	Per capita income	Total jobs	Manufacturing jobs	Manufacturing job share	Share of counties		
	Percentage							
Counties with no manufa	acturing job growth:							
Nonmetro	-3.2	12.0	6.4	-24.8	14.1	26.2		
Urbanized	-4.2	11.5	7.4	-24.3	18.2	5.6		
Less urbanized	-4.5	12.0	2.1	-25.5	14.3	15.2		
Rural	1.7	12.8	17.6	-23.3	9.2	5.4		
Metro	3.2	13.5	12.4	-26.6	17.4	13.5		
Counties with manufactu	uring job growth:							
Nonmetro	1.2	16.3	20.2	66.3	17.8	46.9		
Urbanized	4.8	14.6	24.5	29.9	21.7	2.2		
Less urbanized	.7	16.1	19.4	54.0	18.6	32.5		
Rural	1.8	17.4	21.6	106.2	14.8	12.1		
Metro	15.2	19.8	43.0	38.6	20.4	13.5		

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Dept. of Commerce.

centrations of similar firms more desirable than ever before (Glaeser, Scheinkman, and Shleifer).

Many observers have thus concluded that the process of restructuring favors urban locations over more remote, rural areas as the future location of manufacturing activity (for example, Malecki, Henderson, 1988). Recent studies on urban growth indicate that growth in a particular industry is strongly related to both past concentration in that industry (Henderson, Kuncoro, and Turner) and on the diversity of industrial structure (Henderson, 1995). Other studies indicate that human capital accumulation occurs more rapidly in urban areas (Glaeser, Scheinkman, and Shleifer).

Rural Midwest Well Positioned for Future Growth

Predictions of the future course of the manufacturing sector paint a grim picture for rural manufacturing and the communities that depend on it. Despite the compelling logic underlying these predictions, however, two things must be kept in mind, especially with respect to rural manufacturing in the Midwest.

First, these predictions do not appear to be materializing, despite the fact that many of these changes have been going on for some time. Industries that can be identified as undergoing the most restructuring do not appear to be recentralizing. Similarly, Wojan and Pulver argue that the product cycle, the model of industrial location that plays a prominent role in much of the more pessimistic work on rural manufacturing growth, does not explain patterns of industrial location well and that rural areas in the Midwest have proven to be profitable locations for highgrowth industries.

Second, even if these predictions do materialize nationally, rural communities in the Midwest are in a relatively good position. As argued above, the industry mix of many of these communities appears to be favorable because of its reliance on durables industries. Perhaps more important for future rural manufacturing growth is the proximity to concentrations of urban manufacturing. To the extent that proximity to a diverse industrial structure is a precondition for growth of successful manufacturing firms, rural communities in the Midwest may have a competitive advantage over other rural areas.

Obviously, it is impossible to predict how rural manufacturing will perform in the future. Many of the factors that will play very large roles in determining the fate of rural firms and the communities that depend on them—for instance the national business cycle and growth in international trade—are entirely beyond their control or influence. However, even if external conditions are not optimal for overall rural growth, those firms and communities that are able to compete in world markets are likely to

prosper. As Kanter argues, firms and communities cannot ignore the fact that we are in a global economy. Firms, businesses, and communities that try to ignore this reality are likely to be overtaken by those who actively participate and take advantage of the opportunities that the global economy presents.

For Further Reading . . .

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